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SUMMARY OF UNDERSTANDINGS

Introduction

Following the exchange of views between Nikita S. Khrushchev, Chairman of the Council of Ministers of the Union of Soviet Socialist Republics, and John F. Kennedy, President of the United States of America, regarding cooperation in the exploration and use of space for peaceful purposes, the USSR and U.S. representatives designated for the purpose have discussed in some detail the possibilities of cooperation in meteorology, a world geomagnetic survey, and satellite telecommunications.

In the field of meteorology, it is important that the two satellite launching nations contribute their capabilities toward the establishment of a global weather satellite system for the benefit of other nations.

The compilation of a map of the magnetic field of the earth with the aid of satellites is extremely important both for the further successful exploration of space and for advancing the science of earth magnetism.

Telecommunications by means of satellites is expected to lead to a considerable improvement of communications facilities

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all over the world and can be a most important contribution to the extension of contacts and friendship among nations. Communication satellites can also be used for domestic needs within a single country.

The USSR and U.S. representatives have arrived at the following understandings which they agree to refer to their governments for consideration.

Meteorology

It is agreed that this program falls naturally into two stages, an experimental and an operational stage.

The first stage will extend approximately from the present time through 1963-64 during the development of experimental weather satellites by both the USSR and the U.S.

In this first stage, the two countries will arrange for the establishment of communication links adequate for the transfer, from each to the other, of the data gathered by each nation from its own experimental meteorological satellites. These communication links would connect the World Weather Centers at Moscow and Washington. A Joint Working Group of technical experts will meet in October 1962 to decide upon suitable communication links to be established with due regard to the sharing of costs and the interests of other nations.

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The Joint Working Group will also establish the criteria for the two-way transfer of satellite data over such links, with the understanding that such transfers will include selected cloud-cover pictures, especially related to storms, vortices, fronts, and the generation of these phenomena, with geographical coordinates provided for all pictures selected, together with nephanalyses based upon the data as a whole. The Joint Working Group will agree upon a date for initiating the two-way transfer of such data, designating this date with due regard for the readiness of the communication links and the readiness of the USSR and the U.S. to provide data of approximately equivalent interest. Data should be exchanged as quickly as possible. The same communication links would be used to exchange weather charts, diagrams, vertical cross-sections, and the material required for solving the problems of world weather, including the extension of prediction periods. Coordinated research efforts should be directed toward these goals.

The second stage of the meteorological satellite program will begin approximately in 1964-65 and will apply to the coordinated launchings by the two nations of a system of operational weather satellites. In order to prepare adequately and in a timely fashion for such coordinated launchings, a

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second Joint Working Group will meet in March 1963 to determine mutually agreeable launching schedules for the operational satellites, the numbers of such satellites, their orbits, and the comparability (to the degree desirable) of the characteristics of their sensors and the data to be obtained.

These discussions as to satellite characteristics, numbers, and orbits shall be made with due consideration of recommendations of the World Meteorological Organization (WMO) with regard to the objectives of weather-data acquisition by satellites for both operations and research.

The two-way transfer of data during the second stage shall be determined by the two nations and shall be made on a real-time basis. This transfer and the wider dissemination of such data to other nations will proceed with full consideration of the recommendations and procedures of the World Meteorological Organization (WMO). Nephanaleses, pictures of cloud cover, and processed data on radiation fluxes will be exchanged mutually.

World Geomagnetic Survey

It was agreed to be useful to arrange for a joint effort in this field by the coordinated launching of two artificial

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earth satellites equipped with magnetometers during the period of the International Year of the Quiet Sun. These two satellites will be launched, one by the USSR and the other by the U.S., on different mutually agreed orbits. The period before the International Year of the Quiet Sun will be used by both parties (the USSR and the U.S.) to continue magnetic measurements in space in accordance with national work programs, with mutual exchange of processed data of the magnetic measurements.

The representatives of the USSR and the U.S. agreed that it would be desirable to establish a Joint Working Group, consisting of USSR and U.S. specialists, for the preliminary consideration of the scientific and technical aspects of the compilation of a map of the magnetic field of the earth with the aid of artificial earth satellites. In particular, the Joint Working Group is to make recommendations on the shape of the orbits, their angle of inclination to the equator, the period during which the satellites are to be operated, the necessary accuracy of measurements, the type of magnetometers to be used on the satellites, the methods of processing and analyzing the data obtained, the methods of correcting them, and so on.

Conducting its work, the Joint Working Group will take into consideration any possible recommendations on this

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question of the Scientific and Technical Subcommittee of the UN Committee on the Peaceful Uses of Outer Space.

The parties agreed that it would be desirable for the members of this Joint Working Group to be appointed by each side as soon as technically possible to begin work on the problems placed before the group, by correspondence and by subsequent meetings, if necessary.

The parties recognized that data obtained in earth magnetic observatories were of particularly great importance for the successful compilation of a map of the magnetic field of the earth with the aid of the artificial earth satellites. They therefore agreed to make efforts to arrange, through World Data Centers A and B, for a prompt exchange of standard magnetograms from earth observatories, and to arrange that these magnetograms contain all the data required for their use for analyzing the data acquired by satellites. Each side agreed to use its influence with non-governmental organizations (such as the International Committee on Geophysics (CIG), the Committee on Space Research (COSPAR), and others) to expedite the transmission to World Data Centers A and B of the necessary earth magnetic data from third countries cooperating with the USSR and U.S.

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Satellite Telecommunications

Recognizing the role of the International Telecommunications Union and the importance of the establishment of bilateral cooperation between the USSR and the U.S. in the exploration and peaceful use of outer space, we submit the following recommendations:

In 1962-63 the USSR and the U.S. agree to cooperate in experiments on communication by means of the U.S. satellite "Echo A-12".

We agree to give further consideration to the possibilities of cooperation in joint experiments using active satellites that may be launched by either nation in the future, including the mutual exchange of information on the results of such experiments, and to resume discussions of these possibilities at our next series of meetings.

Among the problems which should be discussed at the following meetings is that of the preparation for the working out with other nations of a project for an experimental global system of space communications with due regard to the recommendations of the ITU.

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Conclusion

The recommendations proposed at the present stage of the bilateral discussions by the representatives of the USSR and the U.S. have a preliminary character and will be presented by both parties to their governments through appropriate agencies for final consideration. If either of the two parties finds it necessary to make any corrections, additions, or deletions in the text of the prepared documents, then all of these changes should be made within the period of two months from this date by correspondence, which will be sent to the following address in Moscow:

Academy of Sciences of the USSR

Leninsk: Prospekt 14

Moscow

USSR

and to the following address in Washington:

National Aeronautics and Space Administration

Attention: Dr. Hugh L. Dryden

400 Maryland Avenue, S. W.

Washington 25, D. C.

U. S. A.

Geneva, June 8, 1962

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